

BLACK & VEATCH

MEMORANDUM

JUL 1 1983

Intermountain Power Project
Intermountain Generating Station
90 and 95 Per Cent SO₂ Removal Costs
Per Ton of SO₂ Removed

B&V Project 9255
B&V File 14.0200
32.0400
41.1007
July 1, 1983

To: R. L. Nelson

From: D. O. Swenson

An analysis of the costs of SO₂ removal for Units 1 and 2 at the Intermountain Generating Station has been performed. The costs of flue gas desulfurization (FGD) per ton of SO₂ removed for the Intermountain Generating Station are shown on Table 1 for 90 per cent and 95 per cent SO₂ removal. These costs are presented in total levelized annual 1986 dollars per ton of SO₂ removed and incremental levelized annual 1986 dollars per additional ton of SO₂ removed by retrofitting for 95 per cent design SO₂ removal prior to commercial operation. The total levelized annual costs is the sum of the total capital cost and the capitalized operating costs multiplied by the levelized annual fixed charge rate. Total capital costs for the 90 per cent SO₂ removal system in this table were taken from the Air Quality Control System Contract Estimate Summary, March 18, 1983. The equipment in this capital cost estimate includes limestone receiving and storage equipment, limestone additive preparation equipment, flue gas desulfurization equipment (including flue gas reheat), FGD waste separation and storage equipment, FGD ductwork and dampers, FGD piping and valves, FGD electrical and control equipment and FGD structures, including foundations and support steel. The total FGD system operating costs were calculated with an Air Quality Control System cost estimating program using the Intermountain Generating Station

MEMORANDUM

JUL 1 1983

Intermountain Power Project 2
Intermountain Generating Station
90 and 95 Per Cent SO₂ Removal Costs
Per Ton of SO₂ Removed

B&V Project 9255
July 1, 1983

operating conditions and fuel data. The equivalent differential capital cost with a 95 per cent SO₂ removal system retrofitted prior to commercial operation was taken from Table 4-2 of the June 17, 1983 special report, "Cost Analysis of Various NO_x and SO₂ Control Technologies for the Intermountain Power Project". The incremental levelized annual cost is the equivalent differential capital cost for 95 per cent SO₂ removal multiplied by the levelized annual fixed charge rate.

dlw
Attachment

**TABLE 1. COSTS PER TON OF SO₂ REMOVED FOR 90 AND 95 PER CENT SO₂ REMOVAL
(INCLUDING CAPITAL AND ANNUAL COSTS) ⁽¹⁾**

	<u>Unit 1</u> \$/ton	<u>Unit 2</u> \$/ton	<u>Total</u> \$/ton
Total Flue Gas Desulfurization Cost Per Ton of SO₂ Removed			
90% Removal (23.2 thousand tons SO ₂ removed per year per unit)	1,500	1,000	1,260
95% Removal (24.5 thousand tons SO ₂ removed per year per unit) ⁽²⁾	3,980 ⁽³⁾	3,780 ⁽³⁾	3,880 ⁽³⁾
Incremental Flue Gas Desulfurization Cost Per Ton of Additional SO₂ Removed			
95% Removal (1.3 thousand tons additional SO ₂ removed per year per unit) ⁽²⁾	48,200 ⁽³⁾	53,000 ⁽³⁾	50,600 ⁽³⁾

-
1. Costs are in levelized annual 1986 dollars.
 2. Retrofit for 95 per cent design SO₂ removal prior to commercial operation.
 3. Includes replacement power cost for 18 month delay.